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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,355	09/11/2003	Alexander Pakhomov		5174

7590 05/18/2004
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EXAMINER

MOSKOWITZ, NELSON

ART UNIT PAPER NUMBER

3663

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,355

Applicant(s)

PAKHOMOV ET AL.

Examiner

Nelson Moskowitz

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Application 10/659,355

DETAILED ACTION

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al or Liebermann when taken with Bennett, and Reis et al or Senechalle et al.

In determining obviousness, the following factual determinations are made:

- a. first, the scope and content of the prior art;
- b. second, the difference between the prior art and the pending claims.
- c. third, the level of skill of a person ordinary skill in this art; and
- d. fourth, whether other objective evidence may be present, which indicates obviousness or nonobviousness. See, e.g., *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 282 US 1, 17-18, USPQ 456, 466-67 (1966)).

Objective evidence includes long felt but unmet need for the claimed invention, failure of others to solve the problem addressed by the claimed invention, and not other factors. See, e.g., *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 Fed. 1573, 1574-76, 22 USPQ 744, 745-47 (Fed. Cir. 1984).

a) In examining the scope and content of the prior art it is found that Liebermann and Yun et al disclose acoustic wave sensors having 2 plates that form a capacitor, with only one plate moving relative to the other plate (see, inter alia, figure 3 of Liebermann and figure 1 of Yun et al). In addition, both references teach using a pre-charged conductive membrane between the plates (see, inter alia, item 20 of Yun et al, and items 4 and 6 of Liebermann). It is also noted

that Yun et al places the amplifier 9 inside the transducer case. However, these references do not teach increasing the mass of the moving plate.

b) Bennett teaches the addition of mass (figure 3, #80; col. 4, lines 41-50) to a sensor in order to provide greater sensitivity from acoustic wave sensors.

c) The latter references teach the use of two conductive enclosures to shield the circuits from EMI interference.

Third, under *Deere* the level of ordinary skill in this art may be determined by the analysis of the Court as set forth in *Environmental Design Ltd. v. Union Oil Co.* 713 F.3d 693, 218 USPQ 865-69 (Fed. Cir. 1983) cert. denied, 464 U.S. (1984), where the court listed these factors relevant to the determination of the level of ordinary skill: type of problems encountered in the art, prior art solutions, rapidity of innovations, sophistication of technology, and educational level of the active worker in the field.

The types of problems encountered in the art involve seismic transducer noise and cost.

Innovation in this field has been very fast as can be seen from virtual birth of this field in the 1930s to its present sophisticated status.

Prior art solutions include the release of capacitive seismometers and the addition of mass to transducers in order to improve wave reception. Skilled artisans generally have a college level education and over three (3) years of experience, as can be seen from published articles in the major journals in this field.

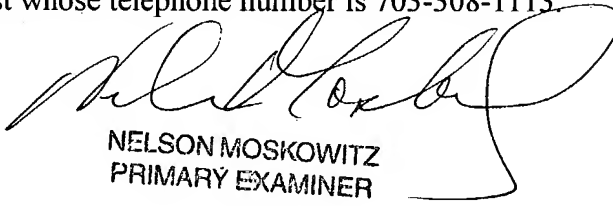
To date, no secondary considerations (objective evidence) have been presented.

Therefore, the use of the case as additional mass on the moving plate of the capacitor, and double encasement to reduce noise, would have been obvious to one skilled in the art, as a mode of reducing transducer signal noise, and for providing greater transducer efficiency.

As regard dependant claim 8 it is noted that the use of copper and nickel as the conductive casing provide no novel or unexpected results and are obvious alternative conductive metals for the prior art disclosed system as set forth above.

2. References D-M (PTO-892) are cited to show the widespread prior art knowledge of using capacitive acoustic wave detectors.
3. Applicants are requested to make of record all relevant and material references of record in their related applications.
4. It is noted that page 7, line 7 of Applicants' specification misspells the word "random", and on line 13, the reference to the "immovable plate 6" is in error as Applicant's specification states that plate 6 is moveable.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Moskowitz whose telephone number is 703-306-4165. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Thomas Tarcza, can be reached on (703) 306-4171. The before final fax phone number for the organization where this application or proceeding is assigned is 703-872-9326. The after final fax phone number for the organization where this application or proceeding is assigned is 703-872-9327.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113



NELSON MOSKOWITZ
PRIMARY EXAMINER